CLAIMS

What is claimed is:

1. A prosthetic joint for replacement of a natural joint to resist dislocation, the prosthetic joint comprising:

a liner including an internal concave portion defining an internal concave diameter, and defining an opening having a passage width smaller than said internal concave diameter;

a ball portion having a ball diameter substantially equal to said internal concave diameter; and

a constraining ring cooperating with said opening;

wherein said ball portion includes an equator having a diameter similar to said passage width;

wherein said ball portion is adapted to be implanted into said internal concave portion during an operative procedure.

2. The prosthetic joint of claim 1, further comprising:

a cup adapted to be implanted into a first boney structure; and

a stem adapted to be implanted into a second boney structure;

wherein said ball portion is a head and is adapted to extend from said stem;

wherein said liner is affixed to said cup such that said ball portion is able to articulate within said internal concave portion.

3. The prosthetic joint of claim 2, wherein said ball portion further defines a cylindrical equator having a cylinder diameter to allow said ball portion to be inserted into said internal concave portion through the opening.

4. The prosthetic joint of claim 3, wherein said cylinder diameter is alignable with said opening in only one insertable orientation, said insertable orientation includes an unnatural orientation of said second boney portion relative to said first boney portion.

5. The prosthetic joint of claim 4, wherein said insertable orientation substantially aligns an axis of said cylindrical equator and said liner.

6. The prosthetic joint of claim 2, wherein said ball portion and said stem are substantially modular and operably interconnect for use.

7. The prosthetic of claim 3, wherein said ball portion generally defines a sphere including an equator and a sphere diameter, wherein said cylinder diameter is formed at said equator such that having a diameter smaller than said sphere diameter.

8. The prosthetic joint of claim 2, wherein said ball portion is resistant to dislocation from said internal concave portion through interaction of said ball portion with said opening of said liner.

9. The prosthetic joint of claim 3, wherein said cylindrical equator is disposed at an angle relative to said stem.

10. The prosthetic joint of claim 1, wherein:

said constraining ring is assembled onto said liner prior to an operative procedure to implant said liner; and

said constraining ring resists a removal of said ball portion from said liner after implantation.

11. The prosthetic joint of claim 1, further comprising:

said liner is adapted to be fixed directly to a first boney structure; and

a modular stem adapted to be implanted into a second boney structure;

wherein said ball portion is a modular head and is adapted to extend from said modular stem;

wherein said ball portion is able to articulate within said internal concave portion.

12. The prosthetic joint of claim 1, wherein:

said constraining ring is assembled onto said liner during an operative procedure to implant said liner; and

said constraining ring resists a removal of said ball portion from said liner after implantation.

13. The prosthetic joint of claim 3, wherein said cylindrical diameter is operable to allow a flow of a fluid through said cup.

14. A method of implanting a joint prosthetic having a modular stem portion and a modular head portion to be associated with a constraining liner after an implantation thereof, the method comprising:

implanting a modular stem into a first boney portion;

implanting the constraining liner to operably associate with a second boney portion;

determining a proper modular head to operably associate said modular stem and said constraining liner after implantation, including:

associating a trial modular head with said modular stem;

disposing said trial modular head in the constraining liner;

moving said first boney portion through a range of motion while said trial modular head is in said constraining liner; and

replacing said trial modular head by implanting a modular head that is associated with said trial modular head having the appropriate range of motion.

15. The method of claim 14, wherein implanting the constraining liner to operably associate with a second boney portion includes:

temporarily associating a trial liner with said second boney portion; and

performing the determination of a proper modular head to operably associate said modular stem and said constraining liner after implantation by trialing the trial femoral head in said trial liner;

wherein said trial liner has a size or shape substantially similar to said constraining liner to substantially simulate a range of motion of said modular head when in said constraining liner.

16. The method of claim 15, wherein temporarily associating a trial constraining liner with said cup includes:

disposing a trial liner including a trial entrance having a dimension similar to said liner entrance dimension; and

fixing said trial liner in a selected orientation relative a cup to allow said modular head to be disposed and moved within said trial liner.

17. The method of claim 16, wherein determining a modular head to be implanted with said modular stem further includes:

selecting a trial modular head having a first taper length;

operatively interconnecting said modular stem and said trial liner with said selected trial modular head; and

determining a proper fit of said modular stem with said selected trial modular head;

wherein a proper fit allows for a substantially natural orientation of said first boney structure relative to said second boney structure with substantially no impingement;

wherein a plurality of said trial modular heads are tested to determine said proper fit;

wherein said modular head is selected to be implanted with a taper length equivalent to said first taper length when a proper fit is found.

18. The method of claim 14, wherein implanting the constraining liner to operably associate with a second boney portion includes:

implanting a cup in a second boney portion; and

implanting the constraining liner to operably associate with said cup;

wherein said constraining liner extends from said cup which is implanted into said second boney portion.

19. The method of claim 14, further comprising:

said constraining liner having an entrance including a liner entrance dimension;

implanting said determined modular head into said constraining liner, including:

aligning a cylindrical equator of said modular head with said entrance;

displacing said modular head through said entrance; and

orienting said modular stem to a natural position so that said cylindrical equator is substantially not aligned with said entrance.

20. The method of claim 14, further comprising:

said constraining liner defining a central axis;

aligning an axis of a cylindrical equator of said modular head with said central axis;

displacing said modular head into said constraining liner; and

positioning said modular head such that said axis of said cylindrical equator intersects said central axis.

21. A method for implanting a dislocation resistant joint prosthesis having a constraining liner and a modular head portion, extending from a modular stem member, implantable into the constraining liner, the method comprising:

affixing the constraining liner such that said constraining liner operably extends from a first boney portion;

implanting the modular stem member into a second boney portion;

disposing the modular head portion on a neck of said modular stem member;

orienting said second boney portion in an unnatural orientation;

inserting the head portion, while the second boney portion is in the unnatural position, into the constraining liner; and

moving the second boney portion to a natural orientation after the head portion is implanted into the constraining liner.

22. The method of claim 21, further comprising:

trialing a plurality of trial modular heads to determine a proper modular head including:

temporarily associating a trial constraining liner with said cup;

disposing a trial liner including a trial entrance having a dimension similar to said liner entrance dimension;

fixing said trial liner in a selected orientation relative said cup to allow said trial modular head to be disposed and moved within the trial liner; and

measuring an orientation of said first boney structure relative to said second boney structure.

23. The method of claim 22, further comprising:

moving said second boney portion through a range of motion relative to said trial liner to determine an early impingement; and

adjusting said trial liner when an early impingement occurs to reduce or eliminate the early impingement.

24. The method of claim 22, wherein trialing a plurality of trial modular heads further includes:

selecting a trial modular head having a first taper length;

operatively interconnecting said modular stem and said trial liner with said selected trial modular head; and

determining a proper fit of said modular stem with said selected trial modular head;

wherein a proper fit provides said first boney portion and said second boney portion is a substantially natural orientation;

wherein said modular head is selected to be implanted with a taper length equivalent to said first taper length when a proper fit is found.

25. The method of 21, further comprising:

implanting the cup into the first boney portion; and

disposing the constraining liner in the cup:

wherein said liner is implanted to receive the head portion.

26. The method of claim 21, wherein said head portion includes a cylindrical equator and orienting said second boney portion in an unnatural orientation includes:

disposing the modular head portion in an orientation such that an implantable cross section is presented to an entrance of the constraining liner such that the head portion is implantable into the constraining liner; and

inserting the modular head portion includes displacing the modular head portion into the constraining liner while the implantable cross section remains presented to the entrance.

27. The method of claim 21,

wherein the constraining liner has an entrance including a liner entrance dimension;

implanting said determined modular head into said constraining liner, including:

aligning a cylindrical equator of said modular head with said entrance;

forcing said modular head through said entrance; and

orienting said modular stem to a natural position so that said cylindrical equator is substantially not aligned with said entrance.

28. The method of claim 21, wherein said head portion includes a cylindrical equator defining an axis and said constraining liner includes a central axis and orienting said second boney portion in said unnatural position includes:

causing said axis of said cylindrical equator to substantially align with said central axis.

29. A trial kit to trial for the implantation of a modular hip joint having a modular femoral head and a constraining liner, comprising:

a modular trial head having an implantation face operable to cooperate with a modular stem and assist in the selection of a modular head;

a trial liner having an entrance dimension and adapted to cooperate with a boney structure and said modular trial head during a trialing process;

wherein said entrance dimension is operable to cooperate with said modular trial head to substantially mimic the constraining liner;

wherein said constraining liner and said modular head interact to resist a dislocation of said modular head from said constraining liner after implantation.

30. The trial kit of claim 29, further comprising:

a modular stem to be implanted into a femur;

a modular head adapted to extend from said modular stem, having an implantation face;

an acetabular cup to be implanted into an acetabulum;

a constraining liner, to be affixed into said acetabular cup, defining an entrance.

31. The trial kit of claim 30, further comprising:

a plurality of said modular heads, wherein each modular head defines a female or male taper each having a different taper length;

a plurality of said modular trial heads, wherein each modular trial head defines a female or male taper length equivalent to one of the different lengths of said female or male taper of said modular head;

wherein a major diameter of each modular trial head is smaller than said major diameter of said modular head;

wherein said plurality of modular trial heads are used to select one of said plurality of modular heads for implantation.

32. The trial kit of claim 31, wherein each of said taper lengths provides a different orientation of said modular stem to said constraining liner.

33. The trial kit of claim 30, further comprising:

a constraining ring associated with said entrance of said constraining liner to substantially increase a rigidity of said entrance.

34. The trial kit of claim 30, wherein said modular head defines a cylindrical equator having an equator diameter adapted to allow said modular head to pass through said entrance; wherein when said modular head is implanted in said constraining liner said major diameter is aligned with said entrance.

35. A prosthetic joint for replacement of a natural joint, the prosthetic joint comprising:

a first member including an internal concave portion defining an internal concave diameter;

a second member having a selected diameter and defining at least one cylindrical portion about at least a portion of a selected equator of said second member;

wherein said ball portion is adapted to be implanted into said internal concave portion during an operative procedure;

wherein said cylindrical portion is operable to substantially ensure contact with less than the entire internal concave portion.

36. The prosthetic joint of claim 35, wherein said first member includes a liner operable to resist removal of said second member from said internal concave portion after implantation therein.

37. The prosthetic joint of claim 35, wherein said second member defines at least a portion of a sphere and said cylindrical portion is positioned at a selected equator of said sphere and includes a radius less than a radius of said sphere to a point outside of said cylindrical portion.

38. The prosthetic joint of claim 35, wherein said cylindrical portion is operable to allow a selected fluid to flow into said internal concave portion after said second member is positioned in said first member.

39. A prosthetic for replacement of an anatomical portion, comprising:

a first member including an internal concave portion defining an internal concave diameter; and

a second member having a first diameter substantially equal to said internal concave diameter and defining at least a portion of an equator having a second diameter less than said first diameter;

wherein said second member is adapted to be implanted into said internal concave portion during an operative procedure;

wherein said equator substantially eliminates complete contact of said second member with said first member.

40. The prosthetic of claim 39, wherein said second member substantially defines a sphere and said equator is an equator of said sphere generally defining a cylindrical portion including a selected height.

41. The prosthetic of claim 40, wherein said first member and said second member articulate relative to each other;

wherein said equator defined by said second member is operable to reduce wear by contacting said internal concave portions on a surface area less than a surface area of a surface of the sphere.

42. The prosthetic of claim 39, wherein said equator defined by said second member allows a passage into said internal concave portion of said first member after said second member is implanted relative to said internal concave portion;

wherein a selected fluid may flow into said internal concave portion through said passage.

43. The prosthetic of claim 39, wherein a passage width of said first member is substantially equivalent to said second diameter of said second member;

wherein said first diameter of said second member is greater than said passage width of said first member;

wherein said second member is operable to be implanted into said first member of a first orientation and constrained within said first member in a second orientation.

44. The prosthetic of claim 40, wherein said second member defines a transition from said cylindrical portion to reduce a wear on said first member.